UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
WASHINGTON, D.C. 20460

OFFICE OF CHEMICAL SAFETY
AND POLLUTION PREVENTION

MEMORANDUM

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SUBJECT: Verification Memorandum for Aldicarb for SF Bay Species

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THRU: Anne Overstreet, Team Leader
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TO: Rochelle Richardson, Executive Assistant to the Director
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This memorandum serves to provide additional information on the use pattern of aldicarb not captured in the LUIS process. RD and PRD's role in the verification process is to fill information gaps and provide division appropriate expertise as outlined in the LUIS Verification SOP for RD and PRD.

PRD provides information and status regarding changes to the chemical use (such as application parameters, cancellations, or label language) that occurred as a result of the reregistration process. RD provides information regarding changes to the chemical use that may have occurred after the date of the LUIS label extraction. In the case a "Data Doer Only"[1] report was conducted, the CRM and PM will ensure that all highest application rates are reflected on the EFED Spreadsheet. The CRM and PM have drafted the "Registration and Reregistration Verification" section of this memo to clarify knowledge gaps a risk assessor may encounter while using the data contained in the LUIS report.

[1] This type of LUIS report is conducted when the AI of interest has more than 50 products. This report will contain: (1) products actively registered to the data doer, (2) all technical registrations regardless of registrant, and (3) all active California special local needs (SLN) registrations.

If further clarification is needed, please contact Susan Bartow or Anne Overstreet.

Registration and Reregistration Verification

Date and Scope of the RED

- The Reregistration Eligibility Decision (RED) for aldicarb was issued in September 2007 (EPA-HQ-OPP-2005-0163-0206).

- Besides the parent compound, the RED identifies two cholinesterase-inhibiting metabolites, aldicarb sulfoxide [2-Methyl-2-(methylsulfinyl)propionaldehyde O-(methyl carbamoyl) oxime] and aldicarb sulfone [2-Methyl-2-(methylsulfonyl)propionaldehyde O-(methyl carbamoyl) oxime]. Aldicarb sulfoxide is considered to have similar potency to the parent in terms of toxicity, while aldicarb sulfone is less potent.

- End-use products containing aldicarb are restricted use and can only be applied by a certified applicator. Typically, aldicarb is applied early in the growing season, either pre-plant, at-planting, or early post-emergent, using ground application equipment. Positive displacement application equipment and immediate soil incorporation are required. Aldicarb is also applied as a split-season use to peanuts. It is applied as a broadcast (at-pegging) to the canopy of the peanut plant for nematode control.

Label Uses / Rates and Mitigation

- Risk mitigation measures required by the RED include:

    - **Well Set-backs** - In the peanut growing regions of Georgia, Alabama, South Carolina, and Florida, an increased well set-back from 300 to 500 feet was required for wells not encased to a depth of 100 feet in vulnerable soils, and a shallow depth to ground water (less than 25 feet).

    - **Removal of Uses** - To reduce potential exposure of aldicarb to wildlife and aquatic life, all current registrations on coffee, ornamentals, pecans, sugarcane, sorghum, tobacco, and alfalfa grown for seed were voluntarily cancelled.

    - **Reduced Application Rates** –Table 1 summarizes the maximum application rates for soil applications by crop/use site as required by the RED.

Table 1. Reduced Maximum Application Rates for Crops/Uses in RED.

Crop	Maximum Application Rate (lbs ai/acre)
cotton, at-plant application rate	1.5
cotton, side-dress application rate	2.1
cotton, per-season application rate	3.6
soybeans	1.5

- **Reduced Application Areas** – The following uses were restricted to certain geographic areas as follows:
  - For application to **dry beans**, use is limited to Idaho, Michigan, Oregon, and Washington.
  - For application to **soybeans**, use is limited to Georgia, North Carolina, and South Carolina.
  - For application to **sugar beets**, use is limited to California, Colorado, Idaho, Montana, Nebraska, Oregon, Washington and Wyoming.
  - For application to **sweet potatoes**, use is limited to Louisiana and Mississippi.

- **Application Requirements** – The following summarizes the application requirements by crop/use site:
  - For application to **citrus**, label clarifications to specify application of granules in 3 to 6 furrows beside individual trees that are 2 inches deep and spaced on approximately 12 inch centers, immediately covering with soil.
  - For the split-season application to **peanuts**, specifically the at-pegging use of aldicarb, application must be made late in the afternoon or early evening and immediately followed by irrigation, and completed within 24 hours which will help dissolve granules thereby making them unavailable for wildlife.
  - For application to **peanuts,** label clarifications for post-emergent use: apply granules in a band 12 to 18 inches wide on the row and into the plant canopy. Ensure that plant foliage is dry prior to application. Dislodge granules from foliage by suitable means that will not damage the plant.
  - For application to **peanuts,** Label clarifications to ensure that at-planting applications are done over an open furrow which is 4 to 6 inches in width, known as "T-band" applications.
  - For application to **sweet potatoes,** add label language specifying granules be applied in a 12-inch band within an open furrow and covered immediately during bed forming by mechanically hilling 8 to 10 inches.

- **Label Modifications** – For **all uses,** label modifications to help reduce the amount of aldicarb left on the surface of the soil making it less available for the wildlife potentially at risk.

- In August 2010, EPA completed a new risk assessment based on toxicity data submitted in response to the RED. This new human health data indicated that aldicarb no longer met the Agency's rigorous food safety standards and might pose unacceptable dietary risks, especially to children. A subsequent Memorandum of Agreement (MOA) was signed between the Agency and Bayer CropScience on August 16, 2010 which ended use on citrus and potatoes (the uses of concern to the Agency) and outlined a phase-out of the remaining Bayer registered uses by 2018.

- Risk mitigation measures required by the MOA include:

  - **Additional Well Set-backs** – Additional well set-backs are defined for cotton, peanut, and soybean uses in southeastern United States as follows:

- For cotton and peanut applications in Georgia, Alabama, South Carolina, and Florida, additional well set-backs are required as follows:
    - For single at-plant and single post-emergence applications to **cotton**, a well set-back of 700 feet is required for wells not encased to a depth of 100 feet in vulnerable soils, and a shallow depth to ground water (less than 25 feet).
    - For split at-planting and post-emergence applications to **cotton**, a well set-back of 1,000 feet is required for wells not encased to a depth of 100 feet in vulnerable soils, and a shallow depth to ground water (less than 25 feet).
    - For single at-plant applications to **peanuts**, a well set-back of 700 feet is required for wells not encased to a depth of 100 feet in vulnerable soils, and a shallow depth to ground water (less than 25 feet).
- For single post emergence applications and split at-planting and post emergence applications to **peanuts** in Georgia, Alabama, and Florida, a well set-back of 1,100 feet is required for wells not encased to a depth of 100 feet in vulnerable soils, and a shallow depth to ground water (less than 25 feet).
- For at-planting applications to **soybeans** in Georgia and South Carolina, a well set-back of 700 feet is required for wells not encased to a depth of 100 feet in vulnerable soils, and a shallow depth to ground water (less than 25 feet).

- **Removal of Uses** - To reduce potential exposure of aldicarb, all current registrations on citrus and potatoes were voluntarily cancelled.

- **Reduced Application Rates** –Table 2 summarizes the maximum application rates for soil applications by crop/use site as required by the MOA.

Table 2. Reduced Maximum Application Rates for Crops/Uses in MOA.

Crop	Maximum Application Rate (lbs ai/acre)
cotton, at-plant application rate	1.05
cotton, post emergence side-dress application rate	0.75
cotton, split application annual application rate	1.8
peanuts, at-plant application rate	1.05
peanuts, post emergence application rate	1.5
peanuts, split application annual application rate	2.55
soybeans, at-plant application rate	1.05

- **Additional Application Requirements** – The application of aldicarb to the following crop/use sites is restricted to one application per use season:
    - Cotton applied at planting
    - Cotton applied post emergence as a side dress
    - Peanuts applied at planting
    - Peanuts applied post-emergence
    - Soybeans applied at planting.

- These new mitigation measures were placed on the stamped accepted Bayer CropScience product label on August 16, 2010.

- An Ag Logic, LLC aldicarb end use product (Meymik 15G) was registered by the Agency on December 22, 2011. The product is registered for use on peanuts, cotton, sugar beets, dry beans, soybeans, and sweet potatoes. All mitigation measures required by the 2007 RED and the 2010 MOA with Bayer CropScience are included on this product's label.

- An Ag Logic, LLC technical product (Aldicarb Technical) was registered on January 20, 2012.

- A summary of the active aldicarb registrations can be found in Table 3.

Product Reregistration

- Aldicarb product reregistration is complete. The Bayer CropScience product label was stamped "Accepted" on August 16, 2010.

Registration Division Review

- No changes have occurred in the use patterns of the end use products since the last accepted labels and no changes are pending.

Table 3. Active Registrations for Aldicarb

Registration #	Registration Name	Company Name	Form	% Active Ingredient	Restricted Use
264-330	TEMIK Brand 15G Aldicarb Pesticide	Bayer CropScience LP	Granular	15	Yes
87895-1	Meymik 15G	Ag Logic, LLC	Granular	15	Yes
87895-2	Meymik Technical	Ag Logic, LLC	Solid	96	No
CA110003	TEMIK Brand 15G Aldicarb Pesticide	California Cotton Ginners and Growers Association	Granular	15	Yes